

*American*  
**FRUIT GROWER**



## BROWNING'S Smart idea!

He builds a "luxury liner" to give the finicky turkey a safe soothing ride from hatchery to grower!



"TURKEYS don't know enough to come in out of the rain," says Ford Truck user Perry Browning. "Young turkeys sometimes don't recognize food or water. A scrap of paper, or a fall of snow may send them into a murderous stampede."

"To truck 15,000 delicate, day-old birds like this for 1,200 miles is quite a headache. But I've licked the problem with my Ford 'Poult Pullman.' It's fully insulated, it's air-conditioned, and it has the conveniences of a luxury liner. When you have to go that far with a Ford, the easiest riding truck there is, it shows what problems turkey growers are up against."

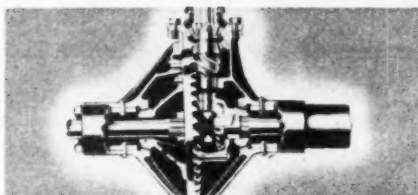


PERRY BROWNING operates "the world's biggest turkey hatchery," at Winchester, Kentucky. "It's the craziest business in the world, because there's nothing crazier than a turkey," says Browning. "but by the same token, it's a most exciting business."

BABY TURKEYS at Perry Browning's hatchery. The cantankerous turkey is the only 100%-American domestic fowl. Until brought in from the United States, turkeys were available nowhere else on earth. A turkey egg is 1½ to 2 times as big as a hen's egg.



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"YOU CAN'T BEAT this Ford Quadrax rear axle for strength. Shafts are full floating, and let the axle housing carry the load. Pinion shaft is straddle-mounted for better gear contact. 4-pinion differential spreads the power load evenly. Big roller bearings are used throughout." This is just one more reason why today's truck trend is to Ford.

## BROWNING'S Smart move!

He uses three Ford Bonus\* Built Trucks in his turkey-hatching business...Smart move!...Smart business!



"A \$15,000 LOSS of baby turkeys could be a \$15,000 loss if not delivered within 48 hours," Browning (right) tells Ford dealer Jack Hodgkin. "My Fords are the best insurance against such loss." "Smart insurance," says Hodgkin, "by

the world's biggest builder of a full truck line. With over 150 Ford Truck models, we've got the one right truck for your job or any job." [BONUS: "Something given in addition to what is usual or strictly due"—Webster.]

## BROWNING'S Smart bet! FORD TRUCKS LAST LONGER!

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## CONTENTS

Calendar of Coming Meetings and Exhibits	4
Letters to the Editor	5
Fighting the Virus Menace with Budwood Certification	7
By C. A. Boyer and Dean F. Lovitt	
Consumers Are Good Pickers	8
By Eldon S. Banta	
The Collins System of "Scientific Neglect"	10
By R. E. Stephenson	
Cutting the Costs of Mouse Control	11
By W. Robert Eadie	
Nationwide Fruits	12
The Apple Picker	13
State News	14
Marketing	15
Nut Growers News	16
News from Washington	16
By Larston Farrar	
In The News	17
New Foliage Sprays of Nitrogen Influence Fruit Set	18
By E. G. Fisher	
Northwest Starts Apple Harvest	20
By Bill Hoard	
Purdue's Mobile Classroom Aids Retailers' Fruit Sales	24
By Charles E. French and Eric Oesterle	
Can We Stop the Oriental Fruit Fly Invasion?	25
By Koji Ariyoshi	
Ramblings	28
Editorial Page	30

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The coverage obtained by concentrate spraying with the new Hardie Orchard Mist Sprayer is so complete and so different from what the grower has been accustomed to see that at first many doubt that any spray has been put on the tree. There is no waste, no drenched, dripping leaves and branches, no soaked earth under the tree. The leaves and branches are not even wet to the touch. But a half hour later, when the tree dries it is plainly seen that the powerful concentrated high pressure-atomized Mist has com-

pletely covered every leaf, twig, branch and fruit. No such measure of pest control ever before was known. Because there is no waste of material and because a concentrated solution is used a 300 gallon tank will spray 100 to 300 trees and do it in 30 to 40 minutes. Only one man and one tractor are required. The powerful air blast permits effective spraying with or against the wind and in the rain. You spray when you want to and get done in half the time. Write for the Hardie Orchard Mist Booklet.

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## CALENDAR OF COMING MEETINGS AND EXHIBITS

Oct. 24-26—National Conference on Prepackaging, Hotel Commodore, New York City.—Wm. Lee Duval and Paul B. Dickman, Co-Chairman, 24 Pre-Pack-Age, 870 Lexington Ave., New York 17, N. Y.

Oct. 26-28—American Society for Horticultural Science annual meeting, Hotel Schroeder, Milwaukee, Wis.—Freeman S. Howlett, Sec'y, Wooster, Ohio.

Nov. 1-3—Florida State Horticultural Society 52nd annual meeting, Tampa.—Ralph L. Miller, Sec'y, Plymouth.

Nov. 9-10—Minnesota Fruit Growers Association annual meeting, in joint session with western Wisconsin growers, LaCrosse Hotel, LaCrosse, Wis.—J. D. Winter, Sec'y, Mondak.

Nov. 11—Orchard of Tomorrow Day, Bell Orchards, Hoonville, Mo.—W. R. Martin, Jr., Sec'y, Columbia, Mo.

Nov. 12-13—Annual Student Horticulture Show, Oklahoma A & M College, Stillwater, Okla.—Fred LeCrone, Dept. of Horticulture, Oklahoma A & M College, Stillwater.

Nov. 15-16—Wisconsin State Horticultural Society and Wisconsin Apple Institute annual convention, Redlaw Hotel, Fond du Lac.—H. J. Rahmlow, Sec'y, 424 University Farm Place, Madison 6, Wis.

Nov. 16-18—Iowa Fruit Growers Association annual meeting, Memorial Union Bldg., Iowa State College, Ames.—Wm. H. Collins, Sec'y, State House, Des Moines 19.

Nov. 17-18—Oregon State Horticultural Society annual meeting, Eugene.—C. O. Rawlings, Horticulture Specialist, Oregon State College, Corvallis.

Nov. 18-19—Montana Horticultural Society annual meeting, Polson.—R. O. Young, Sec'y, Missoula.

Nov. 25-30—Peninsula Horticultural Society annual meeting, Salisbury, Md.—Robert F. Stevens, Sec'y, Newark, Del.

Dec. 1-2—Tennessee State Horticultural Society, Inc., annual meeting, New Southern Hotel, Jackson.—G. M. Bentley, Sec'y, Knoxville.

Dec. 5-6—Kentucky State Horticultural Society annual meeting, Henry Clay Hotel, Louisville.—W. W. Magill, Sec'y, Lexington.

Dec. 5-7—New Jersey State Horticultural Society annual meeting, Claridge Hotel, Atlantic City.—Arthur J. Farley, Sec'y, New Brunswick.

Dec. 5-8—Washington State Horticultural Association 45th annual meeting Wenatchee.—J. C. Snyder, Sec'y, Pullman.

Dec. 6-8—Michigan State Horticultural Society annual meeting, Civic Auditorium, Grand Rapids.—H. D. Hootman, Sec'y, East Lansing.

Dec. 7-8—Connecticut Pomological Society annual meeting, Hartford.—B. F. Hollister, Sec'y, Storrs.

Dec. 13-14—Oklahoma Pecan Growers Association annual meeting and nut show, Chandler.—Fred LeCrone, Asst. Sec'y, Dept. of Hort., Oklahoma A & M College, Stillwater.

Dec. 15-17—Illinois State Horticultural Society annual meeting, Hotel Abraham Lincoln, Springfield.—James N. Cummins, Sec'y, Dix.

### 1950 Meetings

Jan. 4-5 (tentative)—Maryland State Horticultural Society 52nd annual meeting, Alexander Hotel, Hagerstown.—A. F. Vierheller, Sec'y, College Park.

Jan. 4-6—Massachusetts Fruit Growers Association annual meeting, Worcester.—W. R. Cole, Sec'y, Amherst.

Jan. 10-12 (tentative)—New Hampshire Horticultural Society annual meeting.—D. R. Reichelder, Sec'y, Wilton.

Jan. 11-12—South Carolina Horticultural Society annual meeting, Spartanburg.—Roy J. Ferree, Sec'y, Clemson.

Jan. 11-13—Indiana Horticultural Society annual meeting, Muncie.—Lorne J. Doud, Pres., R. I. Wabash.

Jan. 17-18 (tentative)—Maine State Pomological Society annual meeting, Lewiston.—Rockwood N. Berry, Sec'y, Livermore Falls.

Jan. 18-20—New York State Horticultural Society 95th annual meeting, Edgerton Park, Rochester.—D. M. Dalrymple, Sec'y, Lockport.

Jan. 23-25—Virginia State Horticultural Society 54th annual meeting, Hotel Roanoke, Roanoke.—John F. Watson, Sec'y, Staunton.

Jan. 25-27—New York State Horticultural Society eastern meeting, Kingston.—D. M. Dalrymple, Sec'y, Lockport.

Jan. 25-27—State Horticultural Association of Pennsylvania annual meeting, State Educational Bldg., Harrisburg.—J. U. Ruef, Sec'y, State College.

Feb. 8-10—American Pomological Society annual convention, in conjunction with Ohio State Horticultural Society annual meeting, Deshler-Wallick Hotel, Columbus, Ohio.—W. D. Armstrong, Sec'y, APS, Princeton, Ky.; C. W. Eikenwood, Sec'y, OSHS, Wooster, Ohio.

Feb. 9-10—Idaho State Horticultural Society 55th annual meeting, Hotel Boise, Boise.—Anton S. Horn, Sec'y, Boise.

**AMERICAN FRUIT GROWER**



## LETTERS TO THE EDITOR

### What An Accident Taught Me

Dear Sir:

The edge of my orchard had some heavy flowering weeds, and I decided to cut them with a sickle which is more convenient than a scythe. Since a sickle is dangerous, I kept my left arm close to my body.

However, a vigorous swing of the sickle made two bees mad so that one stung me on the forehead and the other on the knee. My left hand went up to brush off the bee on my forehead while my right hand went down to brush the bee off my knee, thus pulling the sharp knife edge of the sickle across my left wrist. It cut a gash that required 10 stitches to close and just missed a large artery and vein.

Upon inquiring among other farmers, we agreed that the sickle is one of the most dangerous tools on the farm. Since then, I have discarded the sickle and have found a whirl-cut power mower to be very satisfactory for close-up edges.

Camden, N. J. E. L. Lehman

Dear Orchard Safety Editor:

Two years ago my younger brother and I were playing on the orchard sprayer. The sprayer has a 10-foot tower, and we were trying to raise it. It is on hinges and at the time was laid down. My brother was on the ground raising it up, and I was on the sprayer tank trying to lift it into position. Suddenly my brother let go, and the tower fell and split the big toe on my right foot. My mother rushed me to the doctor who sewed my toe together and told me that I would never have any nail on that toe. Later two nails grew in, one of them crossed over the other causing me a great deal of inconvenience in getting on my stockings.

My accident has taught me a dear lesson—not to play on machinery. Every time I start to play on machinery I look and remember my big toe.

Otterbein, Ind. Jane Louise Mann

To readers Lehman and Mann go \$5 each for their fine contributions on Orchard Safety. Careless accidents cost millions yearly in wasted time and lost opportunities. To this month's winners of AMERICAN FRUIT GROWER'S Orchard Safety Contest go our heartiest congratulations.—Ed.

### It's All in Knowing How

Dear Sir:

Some years ago a friend gave me a dozen cultivated blackberry plants. I do not know the variety, but, if I had been naming it, I would have called it "Thorny Prodigious." It grew rampantly and thornily but bore fine fruit. Labor was hard to get, and I had to let the plants take care of themselves.

My original, simple little row became a wild hedge and spread further and further each year as old plants died and new ones sprang up.

When I moved from country to city, I offered the plants to neighbors and did not see the plants or neighbors for a year or two. Recently, right at blackberry time, I visited them.

What I saw were plants in single splendor, well spaced. Each had been pruned to two canes and these two had been shortened. The red fruit covering the plants, ripening to jetty blackness, made them look like ornamental fruiting shrubs. Berries could be reached easily although the new canes were beginning to be very much in evi-

dence. My friends' rules were rigid. Each plant must be kept to two canes and these were to be shortened well in advance of the growing season. It seems a good plan to follow this same method with thornless blackberry plants and with any cane fruit that grows exuberantly. Quality is improved and quantity is not sacrificed.

What had become to me a hopeless task was a simple procedure in their farming routine. Memphis, Tenn. Mary S. Smith

### A Fertilizer Hint

Dear Editor:

In regard to your article in the August issue on early defoliation of sour cherries, I had this trouble with my Montmorency trees.

I sprayed year after year for this shot hole disease, and still the trees defoliated. A year ago, in the spring, I fertilized with ammonium sulfate. The leaves stayed on until it snowed. I did the same again this year and noticed the cherries were larger and had a better flavor. Crestline, Ohio S. L. Poth

It takes both proper fertilizer and good leaf spot control to give good foliage. Undoubtedly, a good fertilizer program will help but it will not do it alone.—Ed.

### Blossom Thinning of Peaches

Dear Sir:

I have read with great interest your articles on blossom thinning, for I have tried this method for the last two years on my peach orchard but without any results. The last time I used three different sprays when the trees were 95 per cent in bloom: Elgetol 30, 1 quart per 100 gallons; DN-1, 1 pound per 100 gallons; and DN-289, 1 pint per 100 gallons. Also, I used 2 quarts of Elgetol per 100 gallons, and this caused a heavy kill on some branches and no effect on others.

The blossoms of this variety are deep, like all of the canning clings, and not spread wide as are some of the freestones. Waterford, Calif. Thos. E. Cooper

J. H. Davidson, author of one of the articles to which Reader Cooper refers, makes the following reply: "Most of our chemical thinning experiments have been with freestone peaches. This past season we did a little work with the canning cling variety Amber Gem. Not having worked with this variety before, we did not have very good success but we felt that 1 pint of DN-289 per 100 gallons of spray did a fair job of thinning although it was not enough."

"We had a very warm spring this year during the blossom period, and we attributed much of the poor results to the fact that the proper time to apply the spray was very short. As a result, in many cases, chemicals were applied too late to obtain a good job of thinning."

"Another factor which might affect the results was that in many cases too small a volume of spray was applied. Our recommendations are based on the use of 4 to 6 gallons of spray applied to the average sized eight-year-old tree in this area. Many growers who had poor results used only 1 to 2 gallons of spray per tree."

"In all our experimental tests we spray from the top of our high pressure sprayer, which is about 8 feet high, directing the spray downward. This helps to get the spray into the center of the blossom where it will kill the pistil."—Ed.

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JANUARY ISSUE

## AMERICAN FRUIT GROWER

# FIGHTING THE VIRUS MENACE WITH BUDWOOD CERTIFICATION

Disease-free nursery trees are the first step in the battle against viruses. Because visual inspection has proved inadequate, Michigan nurserymen are using new techniques to give growers healthy stock.

By C. A. BOYER and DEAN F. LOVITT  
Michigan Department of Agriculture

MICHIGAN has long been conscious of the hazard of stone fruit virus diseases to the fruit growing industry. The disastrous peach yellows epidemics of the late 1800's resulted in the Fruit Tree Inspection Act of 1875, one of the first acts of legislation of this type in the United States.

Sixty-five years later, in 1940, Michigan again pioneered in the field of stone fruit virus diseases by initiating a program of budwood certification as one means of control of these diseases.

## Nursery Stock Inspection Inadequate

The decision to institute such a program stemmed from accumulated knowledge regarding the diseases and from several instances where virus contamination in orchards about the country were thought possibly to have arisen from the use of virus-contaminated scionwood.

To those who are familiar with stone fruit virus diseases, such occurrences would be quite possible and the resulting nursery stock sold in good faith by the nurseryman. Symptoms of the known stone fruit virus diseases are seldom seen in one-year fruit trees, and the occurrence of symptoms on two-year nursery trees cannot be relied upon.

Thus the annual inspection of such nursery stock conducted by the plant regulatory agencies in the various States is entirely inadequate and may give both the nurseryman and fruit grower a false sense of security.

Budwood certification attempts to correct this condition by striving at a source of possible virus contamination—the parent scionwood tree.

In the beginning, the Michigan program consisted of visual inspection of bearing trees from which propagating wood was to be selected

by the nurseryman. Inspections were made the season the original scionwood was cut from these trees and for two successive seasons thereafter.

A virus disease of chief concern has been cherry yellows of sour cherry. The disease, although not lethal in respect to killing the tree, causes a decline in yield. Trees infected with the disease at an early age are especially poor producers.

Reliable symptoms of cherry yellows occur in the spring prior to fruit ripening, and then only in seasons and in climates when and where spring temperatures are low. By the time the crop is ripe, symptoms will have disappeared and the customary selection of scionwood at that time can very possibly be made from diseased trees.

These same factors also make visual inspection of bearing parent trees and two-year nursery trees an inadequate check on those trees as desirable scionwood sources. Further, sweet cherries and plums may carry this disease without showing symptoms and thus act as sources of contamination when planted adjacent to sour cherry nursery stock or bearing orchards.

## Indexing Method Used

To correct this "loophole" in the certification scheme, methods of indexing have been adopted. This process consists of placing living tissue from a proposed parent scionwood tree beneath the bark of a known disease-free tree that will give reliable indications of virus infection. For this purpose peach and sour cherry have been successfully used as indicator trees.

Another virus found infecting sour cherry, sweet cherry, and plums, and also peach in western United States, is necrotic ring spot. This virus has

always been found to be associated with cherry yellows but is also known to occur by itself. The role that this particular disease plays in reduction of crop and tree growth and its relationship to cherry yellows are not as yet fully understood. However, pathologists agree that, if at all possible, this virus should not be propagated. Methods of indexing are the only reliable means now known for certification of disease-free stock.

## Disease-Free Seed Needed

Both cherry yellows and necrotic ring spot are known to be carried in seeds of cherry understocks. This further complicates the certification of sour and sweet cherry. A solution lies in proper investigation of the trees from which seed is collected and the elimination or abandonment of those seed sources known to be infected with virus diseases. The establishment of disease-free sources of understock seed in Michigan is now being contemplated.

Peach nursery stock has been more easily guarded against virus diseases known to occur in Michigan. Visual inspection of parent scionwood trees has been a reliable means of selecting trees free of these diseases; namely, little peach, red suture, yellows, X-disease, and rosette mosaic. However, during the past two seasons an additional precaution has been introduced in the certification of peach scionwood.

It has been established for some time that treatment of scionwood in hot water at temperatures well below the point of injuring the buds is sufficient to render these viruses inactive (rosette mosaic an exception). Such treatments have been initiated on a commercial scale at several  
(Continued on page 21)



Pickers waiting to be hauled back to packing house. Right—A "peach" paying for her peaches.



## CONSUMERS ARE GOOD PICKERS

By ELDON S. BANTA

THE STATE of Kansas is distinguished, among other things, for its enormous production of wheat. But the 200,000 inhabitants of the city of Wichita know their surrounding country produces some of the finest fruits, too. They know in particular the farm of Emmett Blood, about four miles south of the city, on U.S. Highway 81. Here is where they flock in July and August to pick their own ripe, delicious peaches.

Three years ago Emmett Blood ran into difficulty in mid-July, just as the early crop of Golden Jubilee peaches was ripening; in fact, his difficulty was that these peaches were ripening so fast they could not be brushed or graded preliminary to packing for shipment. Neither could retailers in Wichita handle such ripe fruit profitably.

As Emmett walked through the 65-acre planting, where a few Jubilees were already on the ground, he ran his big, brown fingers through his hair, deep in thought. Here was his first really big crop of fruit since the 1940 Armistice Day freeze wiped out his 90-acre orchard. The following spring he had set these trees that now were laden with their first big crop, just six years in the making. How could he save the crop at this late stage?

By the time he came in from the orchard that evening, he had formulated a plan which would clean those ripe peaches out of the orchard in a

**A little foresight coupled with Yankee ingenuity solved a critical harvesting problem in Emmett Blood's peach orchard near Wichita, Kansas.**

couple of days—and at a profit, if the plan worked!

That evening he telephoned the farm program director of the radio station in Wichita and laid the proposition before him. Emmett wanted the director to tell the public they could come to the Blood orchard and pick all the ripe peaches they wanted for \$2 a bushel, as long as they lasted.

The next day two announcements came over the air to Wichita housewives, one at 11:00 A.M., the other at 2:00 P.M. This was going to cost Emmett a little money, but he was so sure the plan would work that he was willing to take the gamble. It was probably the first grower advertising of peaches over a Kansas radio station.

At nine o'clock the following morning the dreams of Emmett Blood and his family came true. Not only was the barnyard full of cars, but the high-

way was lined and the fields across the road were crowded with cars. People came with baskets, buckets, all sorts of containers. These were the peach pickers he had hoped for—and the consumers as well!

In just two days the crop of Jubilees was harvested and the people were asking when they could return for more. Emmett told them to listen to their radios and watch the newspaper ads.

The entire peach crop was harvested in this manner by about September 1. Each variety was picked at its prime stage of ripeness and flavor, and by the very folks who were going to eat the fruit next winter.

The 1948 crop turned out about 20,000 bushels on the 4000 trees. The chief varieties—he has about 30 varieties—include Champion, Belle of Georgia, Cumberland (all three white-fleshed), Redhaven, Golden Jubilee, Halehaven, Triagem, Elberta, and J. H. Hale. He has a number of new varieties under trial to see if they are adapted to Kansas soil and climate.

Years ago Emmett grew only Elberta and the harvest season was a hectic two weeks in the heat of August. With the advent of new varieties of good quality, the season now begins with Early-Red-Fre about June 20 and closes with Gage Elberta around September 1.

Asked if he would go back to brushing, grading, and packing peaches for shipment, Emmett said, "As long as

**AMERICAN FRUIT GROWER**



I can get the fruit directly into the consumer's container right in the orchard, there isn't any point in my setting up machinery for packing which would add some 60 cents to the cost of each bushel of peaches."

Do the city folks climb all over the trees, break limbs, pick only the big peaches, and in general cause more trouble than they are worth? Un-supervised they might. But with 23 years' experience in growing fruit, and on the same Blood homestead, Emmett has learned to understand human nature and knows proper supervision is a paying investment. So he has a supervisor for every 20 pickers.

This is how the harvest works. Folks come with their picking containers and baskets. At the packing house they climb aboard one of three rubber-tired wagons pulled by tractors and on these are hauled to the orchard. They are instructed to wait, on the wagon, until told by the field supervisor where to begin picking. He instructs them to pick each tree clean as they go, and in a kind and gentle

sight with considerable concern and on the way to the orchard the remark could be heard, "Just look, Mr. Blood's trees are so badly broken I don't see how he can have a crop next year!" As they came in, their remark to Emmett was, "The storm really hit your orchard, didn't it?" And he replied, "Yes, it was a bad storm."

So the city folks really were concerned over the state of the orchard and did realize damage would reduce next year's crop! But they didn't know, as did Emmett, that by the end of the summer those trees would have sufficient new growth to produce another good crop next year. But Mr. Blood remarked to me later, "It's good for the people to show a little kindness and sympathy towards the orchard. We all feel better as a result."

Since all the peaches on a tree do not ripen at the same time, Emmett has a small crew of pickers to harvest the first few, before the bulk of the crop is ready for the consumer-pickers. These he packs by hand in



The field supervisor sets atop a ladder and instructs folks where and how to pick.

manner sees that they do it. No trouble has ever resulted.

When finished, the pickers place their filled containers on one of the waiting wagons and in a few minutes are transported back to the packing house. Here Emmett collects from each the amount for the peaches they picked (last year it was \$2 a bushel).

During the rush hours in the evening wagons make trips to and from the orchard about every five minutes. It took approximately three days to harvest the 1948 crop of 2500 bushels of Golden Jubilees.

The trees were so heavily loaded last year that limb breakage was prominent throughout the orchard. A storm a few days before harvest helped to make things look even worse. Mr. Blood's city friends took in this

bushel baskets and trucks to retail stores in Wichita. He also supplies a small chain in the city during the season, but this amounts to only a small percentage of the crop.

The Blood orchards also include 15 acres of apples, five acres of cherries, and a small planting of plums. All are in their sixth growing season, as they, too, were set after the 1940 freeze. These fruits are harvested in the same manner as the peach crop.

Apple varieties include Lodi, Transparent, and Wealthy. He chose these summer and early fall varieties because in the fall, when winter varieties would be ripening, he is busy putting in 500 acres of wheat. In addition to wheat, Emmett's diversified farm includes 250 acres of alfalfa hay, which is also sold as a cash crop.



## SELF-PICKERS ENJOY CHERRY HARVEST

CHERRY ORCHARDS in the scenic Finger Lakes region of New York furnish the setting during harvesttime for happy and profitable hours, not only for a goodly share of the public but for cherry growers as well.

Here for the past 10 to 15 years, with the trend increasing since the war when labor shortages forced this type of marketing onto many growers, the public is invited to pick its own fruit.

The extent to which the public takes over in the orchards, some bringing their lunch and making it a regular outing, is shown by the number of cars which line the orchard lanes (above) and the sales of one grower during his best single day last year.

On that day—a Sunday—people picked and paid for over 21½ tons of cherries! The average is five to seven tons per day.

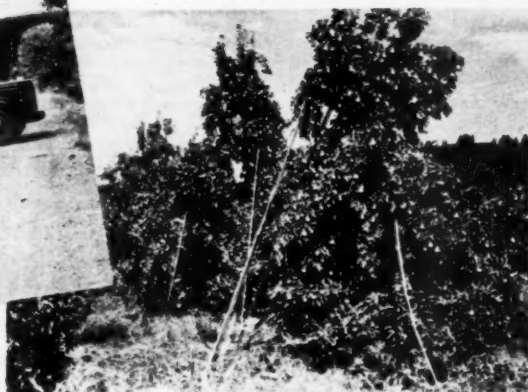
Extensive mailing lists are maintained by some of the growers, and all growers following this plan of harvesting and marketing their cherries try to inform their "public" of the days when the sweets and the sour will be ripe.

Paid advertising is also used. But word-of-mouth advertising by satisfied customers has really been the most effective advertising, according to *The Greene County Farm Bureau News*, who also furnished the accompanying photos.





The yield from the laden trees is hauled on orchard sled to truck where it is automatically loaded.



# THE COLLINS SYSTEM OF "SCIENTIFIC NEGLECT"

By R. E. STEPHENSON, Oregon State College

**N**ESTLED in a 20-acre area in the famous Hood River Valley of Oregon, with snow-capped Mt. Hood standing guard, is probably the most productive pear orchard in Oregon if not in the world. Here, on soil that had its origin in the glaciers from the slopes of Mt. Hood, Rory Collins produces an average of about 1000 boxes of choice pears per acre. His record is 1500 boxes per acre, and he is striving for a 2000-box production.

The soil on which the Collins orchard is located is classed as Parkdale loam. It is yellowish brown in color with a rich layer of leaf mold on the surface that is higher in nutrient content than any other portion of the soil profile. The top six inches of mineral soil likewise contains a considerable portion of humus and available nutrients. Below this depth nutrients are much less abundant.

The soil is deep and easily permeable to water and tree roots. There is a little more silt in the deeper soil and less clay than in the surface, but only a low amount of clay in any part of the soil depth. The soil structure is the granular crumb formation, sometimes described as the "melt in your mouth" structure and labeled the "key to soil fertility."

In his early years of farming, Collins acquired a herd of Jerseys which afforded some income and considerable manure for fertilizing the orchard. Though the Jerseys were disposed of several years ago, Collins is still continuing the practice of

**For more than a dozen years Rory Collins has not used a plow, a disc, or a cultivator in his Hood River pear orchard. In this article a well-known soil scientist analyzes Collins' methods.**

applying manure to the orchard.

The most apparent limiting nutrient element, except nitrogen, is phosphorus, the availability of which is so low that only a trace of it can be detected below the top six inches of depth. The supply of both calcium and potassium, particularly in the top soil, is near neutral, which is favorable to plant growth and production.

Collins' system of orchard soil management hinges upon the idea that a good soil, well fertilized, is necessary to produce a thrifty and consistently productive tree. Humus renewal is given major attention by growing a permanent cover crop, which is returned to the soil, along with the leaves from the trees and the relatively few prunings that result from removal of dead wood and the opening of passageways to facilitate harvesting.

These sources of organic matter are supplemented with frequent applications of manure, some of which is hauled a distance of 100 miles. Sawdust is occasionally hauled from a

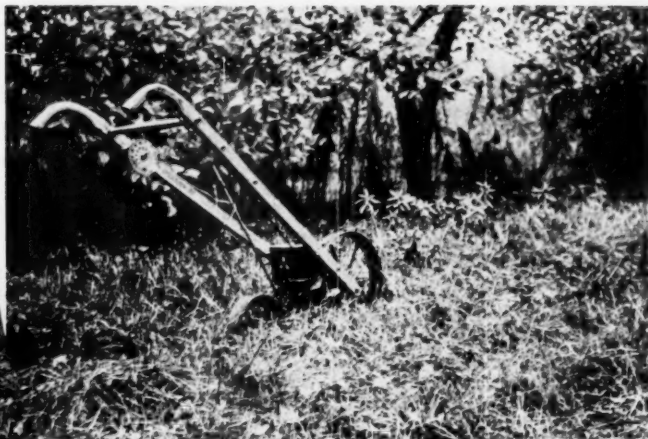
nearby sawmill and spread under the trees. When supplemented with liberal applications of nitrogen fertilizer, sawdust helps make humus. At the present time there is nearly two and one-half times as much humus in the top six inches of soil in Collins' orchard as in the deeper soil where the surface organic treatments do not reach.

No tillage has been practiced in the orchard for more than a dozen years. As a result, the surface of the soil and even the rotting litter on the surface are full of fine feeding roots of the pear trees that, undisturbed by plow or tillage tool, absorb moisture, nutrients, and oxygen. The "no tillage" system saves labor and tools, too.

The entire soil surface is covered with a rich leaf mold that affords perfect soil protection. The Parkdale soil erodes easily when unprotected. Being low in clay and in humus, when conventional management practices are followed, the soil lacks binding material to stabilize the structure. Even on relatively smooth surfaces with little slope, when irrigation water is turned into the open furrows in cultivated lands such as a strawberry patch, erosion occurs. The loose, fluffy soil seems to float with the water, and an irrigation furrow soon enlarges until it becomes a gully. Not so under the Collins' permanent cover, which consists of a dense growth of grass and clover and weeds which stands thick and tall as a man.

(Continued on page 19)

AMERICAN FRUIT GROWER



At left—Ten-year-old Delicious apple tree completely girdled by mice to a height of more than two feet. Above—An ordinary garden seeder may be used to distribute poison bait along the drip line of the trees.

## CUTTING THE COSTS OF MOUSE CONTROL

By W. ROBERT EADIE, Cornell University

**M**OUSE CONTROL is a perennial problem in the sod orchard and only constant vigilance keeps the trees safe from thousands of gnawing teeth.

Present methods of field mouse control which have been widely advocated in recent years are quite effective in reducing the danger of mouse damage but are laborious and costly where large areas are to be treated.

The most widely used method involves the placement of cut apple cubes, dusted with zinc phosphide or some other poison, directly in the active runways of the mice. The work of locating these runways throughout a large orchard by a crew of men results in high labor costs.

It has long been obvious that the development of a successful method of mouse control involving the mechanical distribution of poison baits rather than hand distribution in the orchard would result in substantial savings in these labor costs.

Studies on the foraging habits of field mice showed that it was possible for them to readily find grain baits distributed in lines across their habitat in the sod orchard. Experiments were then conducted to develop a type of grain bait of such nature that one piece of grain would carry a lethal dose for a mouse, since it had been observed that after eating a sublethal dose from one piece of bait mice were apt to refuse to eat additional baits

of the same type. Cracked corn treated with two per cent zinc phosphide was finally chosen as best fulfilling the requirements for the bait.

In large-scale field tests, the poison bait was distributed thinly by means of a hand-operated garden seeder, at a rate of 10 to 20 grains per linear foot of row. One line of bait was placed along the drip line of the orchard trees on both sides of each row. In using the garden seeder, the furrow opener was raised and the furrow closers removed. The seeder thus placed the grain deep in the grass at or near the ground surface where the mice could readily find it and where it was hidden from other wildlife.

Most runways intersected by the line of bait received grain incidentally. Additional lines of bait were placed along all grassy orchard borders and fence rows. In these tests the mouse population showed a drop of 85 per cent in three days after one application of the bait.

### Costs Reduced 75 Per Cent

The method uses about three pounds of prepared grain per acre. Much more than this is not necessary and would be wasted. It is possible to bait the orchard by this method at a rate of 20 to 30 minutes per acre and the total costs can be reduced as much as 75 per cent.

The time of distribution is important in this method of mouse control since the bait is most effective when it can drop at or near the ground surface. Thus the best time for placing the bait is after apple harvest and before leaf-fall when the grass has not yet matted, since a ground cover of leaves or matted grass will intercept some of the grain bait.

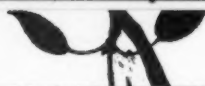
In using any type of poison bait to control injurious rodents, possible danger to other wildlife must be considered. Since it has been shown by workers in the U. S. Fish and Wildlife Service that artificially colored grain is unattractive to birds, a green dye is incorporated in the formula for the grain bait, to make it look as abnormal as possible to birds. In addition, the zinc phosphide used also disguises the grain since it gives it a dirty, sooty-black appearance.

If proper care is used to avoid distributing the grain bait on spots bare of ground cover, such as roadways, most of the bait will be out of sight in the vegetation. No fatalities to wildlife were observed in the field tests.

Orchards are bordered sometimes by grassy fields or meadows from which mice may invade the baited orchard. Such dangers can be minimized by placing several strips of bait across these areas at 30-foot intervals.

(Continued on page 27)





# NATIONWIDE FRUITS



## APPLES

● **Mechanical handling** of boxes of apples on pallets has just been recommended by the U. S. Department of Agriculture to avoid excessive bruising of apples. Pallets are wooden platforms on which 24 or 30 boxes of apples are placed for mechanized handling.

In the findings made in the Pacific Northwest by USDA plant scientists, only one-fifth as much bruising occurred when apple boxes were handled on pallets as when the boxes were handled separately. Bruises incurred during storage of loose fruit was also found to be less with apples handled on pallets.

Bruising damage was greater after apples were taken to the packing line than in the combined operations of picking, hauling, and handling. Dumping, dropping from one level to another on conveyor belts, and hitting various parts of moving equipment accounted for the greatest number of bruises.

Apples dumped into a water bath showed fewer bruises than those carefully dumped on a canvas belt as it passed over a solid surface. New style machines with dumping table and washer progressor on the same level caused fewer bruises than old type machines. Various parts of moving equipment should be accurately timed.

● **The great strain** put upon fruit trees by the heavy crops being produced this year may call for strengthening of split limbs and crotches.

A good method suggested by A. F. Yeager of the New Hampshire Experiment Station is to pull the limbs back into normal position with a block and tackle and while holding them in place, put in braces.

Soft iron rods about one-half inch in diameter have been found satisfactory. These are inserted through holes made in the limb and the main trunk or any good supporting limb. If possible, the rods should be inserted some distance from the crotch. The rods may be several feet in length. The holes are made with an auger.

With this method, wounds heal over more readily than where bolts, washers, and nuts are used.

● **Early varieties of apples** have responded well to preharvest sprays of naphthaleneacetic acid compounds in tests conducted by the Ohio Experiment Station. Less striking results have been obtained with later varieties, beginning with the McIntosh. However, Stayman Winesap proves to be an exception in that the sprays have been very effective on this variety.

The Winesap group—Stayman Winesap, Winesap, and Turley—likewise has responded well to the use of 2,4-D, first suggested by the USDA, as a preharvest spray in Ohio as well as in other States where tried. In Ohio the material is most effective when applied about two weeks prior to the normal date for picking.

A new compound, called Toloxyl (4 chloro-o-toloxyl-acetic acid), introduced by the Michigan station, has been tried experimentally in Ohio and shows promise of being effective on a greater number of varieties than is 2,4-D.

## CITRUS

● **Orange juice continues** to be the outstanding canned fruit juice offered customers in retail food stores in the U. S., a survey conducted under the direction of the U. S. Department of Agriculture last April discloses. Tomato juice was right up at the top of the list with orange juice.

Stocks of other juices, in order of percentages of stores handling them, ranked as follows: Grapefruit, pineapple, grape, prune, apple. Owing to their newness, tangerine juice and the frozen orange juice concentrate were at the bottom of the list.

● **Citrus purees** are among the most recent food products to reach the market in the frozen state. Used by bakeries, ice cream manufacturers, and other food stores, they are said, by the U. S. Bureau of Agricultural and Industrial Chemistry at Pasadena, Calif., to give natural lemon or orange flavor and extra smoothness to such desserts as sherbets, ices and pies.

A commercial firm last year packed a million pounds of citrus purees for bakers and the ice cream industry, while one dairy sold 750,000 pounds of sherbet made from

the frozen orange puree.

Of particular significance to California citrus growers is the possibility that purees may be produced successfully from navel oranges which heretofore have not been suitable for processing because of their tendency to turn bitter.

## BERRIES

● **Strawberry growers** in regions where freezing temperatures are experienced will be in need of straw for over-winter mulching of their plants as soon as the temperature drops to 30 degrees.

A straw mulch has the following advantages, as summed up by West Virginia horticulturists: It protects the crown of the plant from extreme cold weather; reduces chances of the plants heaving; increases chances of a crop by removing the straw when frost dangers are past or replacing when late frosts are anticipated; controls weeds, thus conserving moisture and nutrients for the berries; and keeps the berries clean.

Three to five tons of straw per acre are recommended.

Where leaves are used as a mulch, precaution should be taken that the covering is not too thick, for leaves mat down easily and may smother the plants.

● **Large, luscious everbearing strawberries** on northern markets in mid-September were selling readily at good prices. It hasn't been a common sight to see everbearers on the market at this season because under the matted row system of culture they have been poor producers. Recent improved methods of culture are now making large crops possible.

Under the sawdust-mulch spaced plant system developed by Karl Michener of Burton City, Ohio, and tested at the Ohio Experiment Station, yields of from 4000 to 7000 quarts per acre are produced.

The system consists of setting plants 15 inches apart in rows 42 inches apart, in late March or early April. Cultivation is practiced until early June, when runners should be developing rapidly.

The entire area is then covered with one inch of sawdust. About 140 cubic yards of sawdust are needed to apply a one-inch layer over one acre of land.

Nitrogen deficiency, which often is a problem when sawdust is used, can be remedied by the use of a quickly available nitrogen fertilizer.



Training of the runners begins as soon as the mulch is applied. Three runner plants are rooted from each parent plant, which establishes a triple row from each original single row. The side plants are thrust through the sawdust until the roots are in contact with the soil.

Each row of young plants is established about 12 inches to the side of the center or parent plant row. Plants in these side rows are spaced about 10 inches apart.

After the desired number of runner plants has been established, the remaining runners are removed. Weeds are controlled by hoeing or by hand pulling.

Blossoms are removed until mid-July, to allow the plants to become well established, and the first fruits are picked about three weeks later. Ripe berries are picked twice each week during August and September and once a week in October. Berry production continues until growth is stopped by frost.

The matted row system requires 7500 plants per acre and the yield has been 960 quarts per acre. Under the Michener system 10,000 plants are needed per acre.

The Gem variety has given the most satisfactory results under the Michener system. Gem produces a liberal supply of runner plants. Of course, a long growing season helps considerably. Further north, where fall comes early, the berries may fail to mature.

## PEACHES

● **Sodium hypochlorite**—Clorox to most of us—has been found effective in the control of bacterial spot and brown rot of peaches.

This familiar household cleanser and disinfectant was used in Arkansas tests as a dormant spray for control of bacterial spot at the rate of one gallon to 100 gallons of water. The disease was reduced to eight per cent on the sprayed trees as against about 17 per cent on unsprayed trees.

Three later summer sprays were also used and it was found that while the leaves continued to fall after these applications, they did not drop as heavily as from the trees which received the regular applications of zinc sulfate and lime.

Favorable control of brown rot was obtained with a preharvest spray varying from one gallon to two gallons of commercial sodium hypochlorite in 100 gallons of water, applied approximately 10 days before completion of peach harvest.

As previously reported, Michigan has had good brown rot control, in the packing house, by drenching peaches with a chlorine solution.



## THE APPLE PICKER

*Did you ever move a ladder when the wind is blowin' free?  
Have you ever picked an apple from a fifty-year-old tree?  
Felt that gusty breeze a-whippin' as you swayed from dizzy heights,  
Calmly grabbed another apple, maybe chewed a couple bites,  
Up there on that thirty-footer with a bag slung 'round your neck,  
And it's usually runnin' over, holds a bushel and a peck?  
But the old neck sure can take it, and you scarcely know it's there,  
As you look out o'er the orchard from your perch up in the air.  
Though your hair is all a-tumble, yet you do not give a hoot,  
For you've licked the big old ladder and the apple tree to boot.  
When you started in to pick it, and you looked away up there,  
Those big apples looked defiant, just as if you didn't dare  
Climb up there and try to pick 'em with the wind a-howlin' so;  
Now that you have got the last one, let the bloomin' breezes blow!  
"You have done well, faithful servant," says the Good Book, I am told;  
It's a thrill of real accomplishment to pick a tree that's old;  
For these apple trees get cockier the older that they grow,  
New and different is the challenge made by each tree in the row.  
Just try skinnin' out a middle when you've got the outside done,  
When a tail would come in handy, makin' climbin' really fun!  
Yes, these older trees are goin' fast, too high to spray and trim;  
You can hear the cross-cut singin' as it eats through butt and limb.  
See those young trees now replace 'em with their low and spreadin' tops;  
They'll be full of "Macs" and Cortlands, quite the fanciest of crops.  
Tatman Sweet, Roxbury Russet, even Kings and Baldwins too,  
Kinds that made my Dad's mouth water, givin' way to others new.  
Just the same I aim to spare a few of those old trees of ours,  
Even though I have to ride around on spray rigs built with towers.  
Boys and women pick the young trees; they can reach 'em when they're small.  
Give me a real man's ladder and a tree that's big and tall.  
Lift her up and set her over! Grab those rungs and swing her free!  
Quick! Stick in both those jammers or she'll blow right out the tree!  
Pull! Pull for all that's in you! Brace your feet or down she'll go!  
Ups-a-daisy! There, I've got you! Blow, you devil, blow!*

*Fifteen years ago I wrote that; I'm approachin' forty-five.  
I'm still pickin' lots of apples, and I'm glad to be alive.  
Times have changed, and so's my muscle! Guess I've lost all my ambish!  
Movin' thirty feet of ladder ain't no more my favorite dish!  
Give me trees built short and low down! I like fruit trees young and small  
With both feet on terra firma I ain't got so far to fall!  
If I have to do some climbin', I want ladders short and stout.  
Thirty feet all in one ladder's somethin' I can do without.  
Kids and old folks pick the small trees; that's the only size I got.  
I'm convinced, as age creeps on me, thirty-footers ain't so hot!!*

—Albert L. Mason, Orleans County, N.Y.



## ● Severe Blow Dealt Florida Citrus by Hurricane ● Fruit Prices and Planting Plans Discussed

**FLORIDA**—The 1949-50 citrus crop of Florida was dealt a severe blow by the hurricane of August 26-27, the beating, tearing winds knocking off from 13 to 15 million boxes of fruit before the storm left the State on the 28th. The citrus crop (all kinds), estimated at between 95 and 100 million boxes, was reduced to between 80 and 85 million boxes. (This loss pertains to fruit blown off the trees. Fruit on the trees undoubtedly was damaged but the extent of such losses cannot be determined for several weeks.)

Grapefruit suffered heaviest, the loss for the State being reckoned at 30 to 35 per cent. In Polk, St. Lucie, Indian River, and Highlands counties, where 55 per cent of Florida's seedless grapefruit trees are located, the loss of seedless grapefruit ranged upwards from about 60 per cent in Polk to 90 per cent in St. Lucie. Seeded grapefruit fared little better, with estimated loss in Highlands county of more than 50 per cent and in Polk from 40 to 50 per cent.

Oranges, as was to be expected, held on with more tenacity than grapefruit, with losses ranging from 3 to 15 per cent, and Valencias appeared to weather the storm better than the early and mid-season varieties. Tangerines were able to come nearer taking the storm in stride than either grapefruit or oranges.

Damage to trees was considered light, although loss of foliage was pronounced. Old seedling trees appeared to have suffered the worst.—*Clyde Beale, Assoc. Extension Edr., Gainesville.*

**VERMONT**—Early apples, although not extensively grown, and sold retail primarily through fruit stands, brought better prices than expected. If this can be used as a guide, then the price outlook for good quantity of McIntosh is favorable.

The present orchard planting rate, consisting of individual replacements, will not maintain the apple industry in the State and many growers are beginning to realize that the economical production of high quality fruit is becoming more difficult as their orchards reach or go beyond their mature age.—*C. Lyman Callahan, Burlington.*

**CONNECTICUT**—One of the "grand old men" of the fruit industry, Elijah Rogers, 88, of Southington, died recently. Mr. Rogers established the Rogers orchards, among the largest and most successful in Connecticut. He was a life member of the Connecticut Pomological Society and served as president for two years.—*S. P. Hollister, Sec'y, Storrs.*

**RHODE ISLAND**—A pilot test of marketing McIntosh last spring showed a doubling of sales when quality was kept high by careful grading and frequent store servicing. Good quality fruit moved rapidly both in bulk and in consumer pack. Better grading and more careful handling would seem to be two of the most important factors in moving the large 1949 crop.—*E. P. Christopher, Sec'y, Kingston.*

**NEW JERSEY**—Apple growers already are busy with sales, while their promotion activities are centered largely in the New Jersey Apple Institute. The indicated yield of 3,124,000 bushels compares with 1,364,000 bushels last year.

Cooler September weather has brought some improvement in prices but they continue low even for good Wealthy and McIntosh which moved at from \$3.50 at the start to \$1.75 per bushel for 2½-inch and up. Present prices for the same size are ranging from \$1.60 to \$2 for Rhode Island Greening, \$2.50 to \$3.50 for Red Delicious, 75 cents to \$1.25 for Grimes Golden, and \$1.75 to \$2.25 for Jonathan.—*Fred W. Jackson.*

**PENNSYLVANIA**—Growers are showing greater interest in the promotion of apples than at any time in the past number of years, with the idea of stimulating more orderly marketing of the State's 9½ million bushels.

The processing price has been set at \$2.25 per cwt for A class varieties: Stayman, Grimes, York, and Golden Delicious, with a 2½-inch minimum; on other varieties referred to as class B, \$1.75 per cwt.

Up to 1949 extensive plantings were being made by the removal of old orchards and the setting of additional acreage with concentration on York, Golden Delicious, Rome, McIntosh, and Cortland apple varieties. Prices received for the 1949 crop may influence plantings in 1949-50.—*J. U. Ruef, Sec'y, State College.*

**VIRGINIA**—Sales of good packs of fall varieties of apples are very encouraging to Virginia growers, who are squarely behind the National Apple Institute's program of leaving low grades in the orchard.

Processor prices of \$2.25 per cwt for A varieties 2½ inches and up tree run No. 1 canners; \$1.75 for B varieties; for table pack-out No. 1 canners 2¼ inches and up, A varieties \$1.65 per cwt; B varieties \$1.25, are below the cost of production.

Individual county records indicate clearly that apple tree population is declining in the major apple producing counties of Virginia. The disastrous frosts of 1945, 47, 48, and 49 have discouraged apple producers, and new plantings fall far short of maintaining tree population. Red strains of Delicious, Staymans, Yorks, and Romes predominate in new plantings. For the second successive year the Stayman crop has been ruined by splitting. Many growers are considering top-working Staymans to another variety.—*J. F. Watson, Sec'y, Staunton.*

**WEST VIRGINIA**—Absence of serious drought has tended to dampen the old argument whether Shenandoah apple growers should irrigate their orchards. Carroll Miller, long an advocate of irrigation, still thinks it would pay long-range dividends. A cousin of his, Edward W. Miller, of Romney, W. Va., is carefully irrigating sections of his orchards and checking the results.—*Meador Wright.*

**NATIONAL APPLE WEEK**—October 29-November 5—assumes an importance unequalled in recent years, due to the ample crop of quality apples. The National Apple Week Association is promoting a vigorous campaign to stimulate demand during this week. The campaign includes:

Articles, photos, menus, and recipes on apples, and Halloween apple games and decorations, in the October and November issues of national magazines. . . . Press releases through the Dorothy Ames Carver Service of the United Fruit Company, reaching 7 million housewives, home service directors of public utilities, home economists, etc.; also radio scripts to broadcasters of women's programs in 47 States. . . . During the month of October the J. Walter Thompson Advertising Agency will furnish press releases to food editors of 1400 newspapers in metropolitan and secondary markets.

Allied interests—pie bakers, ice cream manufacturers, the doughnut association, food retailers, restaurants, hotels, etc., will feature apples. Apple organizations, the IAA, and the State horticultural societies are actively supporting the campaign.

The association is asking the support of everyone interested, in order to really make the public know it is Apple Week, and it is in need of financial assistance to carry on its program. Annual dues in the association are \$10 for those who were members in previous years. New members pay an initial entrance fee of \$10 plus the annual dues of \$10. Checks should be made payable to the National Apple Week Association, 154 East Ave., Rochester, N. Y.

**GEORGIA**—Until July 23 the lowest price peach growers received was \$4. The following week, due to greatly increased shipments of peaches from the western States, the bottom dropped out of the market. Later peaches sold better locally, with some growers getting about \$3.50 per bushel. At present peaches are being shipped into this area from Indiana and Michigan.

Two varieties of peaches, Dixigem and Southland, in all probability will again figure largely in planting plans for this year. There is a definite and accelerated trend towards the planting of earlier ripening yellow varieties.

The price range on muscadine grapes is from \$100 to \$140 per ton delivered at the winery. This is considerably lower than last year's high of \$225 per ton.—*Earl F. Savage, Georgia Exp. Sta., Experiment.*

**SOUTH CAROLINA**—Prices received for varieties ripening prior to Elberta were excellent. Dixie Gem brought \$4 and \$4.25 in half bushel Spartan boxes, and \$4 a half-bushel basket. Jerseyland and Redhaven sold from \$3.50 to \$4 a half bushel, while Triogem, July Elberta, Halehaven ranged from \$5 to \$6 per bushel. However, at the beginning of the Elberta market prices broke sharply and most of the Elbertas moved within the range of \$2 to \$2.75 f.o.b.

New plantings will be the lightest in 15 years. It is anticipated that any plantings made will be early varieties or varieties ripening after Elberta. Interest at present is in Dixie Gem, Jerseyland, Redhaven, and Southland for early varieties, and in Rio Oso Gem for the late variety.—*Roy J. Ferree, Sec'y, Clemson.*

**OHIO**—Lack of demand in mid-September caused prices for apples to be variable. Smaller growers have attempted to stimulate sales by distress prices of \$1 to \$2 per bushel to the consumer.

Commercial growers are packing only good fruit. Many of them are not harvesting small apples or salvaging windfalls.

There is more interest in planting than there has been for several years. Many Ohio apple orchards have reached the age when production and quality are slipping. While the crop is large this year, commercial growers realize that an appreciable part of it is coming from farm and town home orchards. Under normal conditions, weather, disease, and insects reduce this type of production to a harmless level. Most of these trees will be dead before a young orchard can reach bearing age.

**ILLINOIS**—Current prices f.o.b. shipping point for U.S. No. 1 grade are about as follows: Jonathan, 2½-inch, \$1.50; 2½-inch, \$1.60-75; Grimes, \$1.25-50; Starking (quality variable), \$2.25 up. Considerable movement of field run apples, mostly in bulk, is averaging about 75 cents.

Largest change in apple, peach, and pear acreage will be made with bulldozers. A slight increase in strawberry acreage is expected next spring.—James N. Cummins, Sec'y, Dis.

**MICHIGAN**—Prices for early apples ranged from \$24 a ton for processing apples to \$2 a bushel for fruit for the fresh market.

The outlook for good returns from McIntosh, Red Delicious, Jonathan, and Northern Spy is very promising. Many of the fall and winter varieties are being handled on consignment.

Michigan processors are now requiring larger apples, 2½ inches and up, because of the excessive waste resulting from processing the small fruit.

New apple plantings in Michigan are not replacing the acreage lost by the tree removal program. However, better management practices have resulted in practically no reduction in the quantity of fruit produced annually. Jonathan is being most widely planted, with McIntosh, Red Delicious, and Northern Spy favored in the order listed. Peach acreage is declining. New plantings of sour cherries are more than replacing the old cherry orchards which are continuing to be removed.—H. D. Hootman, Sec'y, East Lansing.

**MINNESOTA**—Highly colored apples such as Beacon sold briskly during late August and early September for \$3 to \$3.50 per bushel. The early pickings of Wealthy, not too well colored, moved slowly at \$1.25 to \$2. The market is demanding highly colored fruit. The new Minnesota varieties Beacon and Minjon are meeting this demand and such fruit has moved to market surprisingly well. It is too early to report on the market for McIntosh.—J. D. Winter, Sec'y, Mound.

**IOWA**—Our fruit prices are usually determined by the prices of shipped-in apples from the larger producing States of Missouri, Illinois, and Michigan, and it is frequently October or November before Iowa growers can establish prices for their fruit.

At the Council Bluffs Experimental Fruit Farm probably more new varieties of apples, grapes, peaches, plums, and small fruits have been planted, along with standard commercial kinds for comparison, than in any other area of the State. Many commercial growers have set out large tracts of some of these varieties.—Wm. H. Collins, Sec'y, Des Moines.

(Continued on page 27)

# MARKETING

## MARKET BEST APPLES FIRST

● The big drive is on to market this season's bumper apple crop estimated at 129 million bushels, the largest crop since 1939.

If processors take an estimated 38 million bushels and 10 million go into farm and other non-commercial use, a total of 80 million bushels is left for fresh consumption. Calling 80 million bushels a "red ink" figure, grower representatives of the National Apple Institute, at a kick-off meeting in Chicago, started a country-wide campaign to get growers to leave in the orchard all possible drops, culls, uncolored fruit, and unwanted varieties that don't stand a chance to pay their cost. By leaving the cats and dogs on the tree, the total fresh supply can be reduced to 70 million bushels which has a considerably better chance of returning a fair price to the grower.

The grower conference established three additional points to make this year's abundant production pay its way. 1) Give best fruit marketed a chance to pay off through attractiveness and eating quality. Probably no previous season offered greater rewards for reduced bruising, and prompt movement from picking to storage, or to consumer distribution.

2) To win consumers at the outset, begin selling best apples at once. Use every available week in the season. Let proper varietal season and point of best condition govern when to market.

3) Boost the crop with every resource.

● Meeting with the growers, retail representatives pledged to get behind the apple movement with full force, if the industry does its part in keeping poor apples off the market. Special retail sales drives anticipated include:

1) September 29-October 5, to get the movement rolling and consumers coming back for more.

2) October 27-November 2—leading into National Apple Week.

3) Date to be set between Thanksgiving and Christmas to be tied-in with a special sales drive for pork.

● In the meantime regional and State apple organizations were rolling up their sleeves for large-scale promotional efforts.

Members of the Washington State Apple Commission approved a \$600,000 campaign which will include a quarter of a million dollars for newspaper advertising. Direct advertising was scheduled to start September 29 and will ultimately cover 150 apple markets.

● Michigan State Apple Commission on September 1 offered shippers and receivers a colorful promotional display kit including large and small posters, streamers, and a floorstand display 42 inches high. Michigan apples will be advertised in newspapers in larger Michigan cities and the famous Michigan Apple Girl will be posted on 250 station stops of the Chicago Rapid Transit system.

● Each year Canadian and U. S. apple producers get together to discuss the amount and timing of Canadian apple imports to this country. Results of this year's meeting: Although U. S. growers pointed out that our markets cannot be expected to profitably absorb more than the domestic crop, Canadians expect to send 2½ million bushels of apples to the U. S.

## PRICES DOWN

● What sets the price of fruit—number of dollars in consumers' pockets or size of the crop? How does quality, timing, and amount of promotion tie in? If the interplay of forces which combine to set prices were measured exactly, the problem of what growers can do to stabilize prices would be clarified. It is easy to say that reasons for low prices this season are bumper crops and lowered consumer purchasing power, but this is only scratching the surface. A deeper analysis is needed to determine why average F.O.B. fruit prices, as reported by the USDA for the week ending September 10, were as follows:

	Sept. 10	Year ago
Wealthy apples 2½" up		
Benton Harbor, Mich., bu.	\$1.10	\$1.92
Thompson seedless grapes		
Fresno Dist. Calif. 28-lb. lug.	1.61	1.56
Elberta peaches, Var. sizes		
Western Mich., bu.	1.71	2.18
Bartlett pears, comb. ex. fcy. & icy.		
Yakima, Wash., 20-lb. lug.	.85	1.86
Italian prunes, faced U. S. No. 1.		
Payette, Idaho, ½ bu.	.95	1.49



# NUT GROWERS NEWS

## Officers Elected

**A**T THE 40th annual meeting of the Northern Nut Growers Association, Inc., held September 6-8, 1949, at Beltsville, Md., Mildred Jones Langdoc (Mrs. Wesley Langdoc) was elected its president. Her address is P.O. Box 128, Erie, Ill.

Other officers (reelected) are: Vice-president, Dr. L. H. MacDaniels, Cornell University, Ithaca, N.Y.; secretary, J. C. McDaniel, c/o Tenn. Dept. of Agriculture, State Capitol, Nashville 3, Tenn.; treasurer, Sterling A. Smith, 630 W. South St., Vermilion, Ohio.

Pleasant Valley, near Poughkeepsie, N.Y., was selected as the site of the 1950 meeting, exact time of which will be announced later.

Annual dues of \$3 (now payable) will entitle members to the association's annual report and its news bulletins.

Anyone who is interested in the culture of hardy nut trees, either commercial or as a hobby about the home place, is invited to join the NNGA.

## Tests on Hickory Nuts

One group of nut varieties in which interest is reviving is the shagbark hickory selections. These have come from such diverse places as Iowa, New York, and Alabama. No nut has a better flavor than a good shagbark, some variety of which may be grown for home use in nearly all parts of the country east of the High Plains.

A schedule for judging the value of hickory selections is now under test by our vice-president, who would like to receive for testing some 1949 crop samples (about 30 to 50 nuts each) from as many good shagbark trees as our readers can locate.

## Walnuts Needed for Studies

Another request for nuts comes from the nut breeders of the U. S. Department of Agriculture who have hopes of achieving the "ideal" walnut through cross-hybridization of trees which are themselves hybrids between the Persian (English) and the Eastern black walnut of North America.

Dr. H. L. Crane of the Plant Industry Station, Beltsville, Md., will appreciate any and all nuts for planting that may be found growing on the Persian-black walnut hybrid trees that our readers are acquainted with.—*J. C. McDaniel, Sec'y, c/o Tenn. Dept. of Agr., Nashville 3, Tenn.*

# Financial Trading With Britain Raises Hopes For Fruit Exports

By LARSTON D. FARRAR

Washington, D. C.

**B**UMPER world production of fruit this year has brought a number of serious problems to American producers of apples, pears, grapes, and other commodities. Number one problem is how to reopen foreign markets which is claiming a large share of attention from Washington representatives of the fruit industry.

There still is plenty of hope in the industry in regard to lifting of the Canadian restrictions on most fresh fruits and vegetables. These restrictions, which have hampered American fruit exports to Canada since June, 1948, are being "reexamined" in the light of concessions made by U. S. representatives at the recent U. S.-British financial conference in Washington.

## British to Buy Perishables

At that conference authority was granted for Great Britain to spend \$175 million in Marshall Plan dollars for purchase of wheat in Canada. For this concession, the British agreed to purchase from \$8 million to \$10 million of "surplus perishable commodities" in the U. S. during coming months.

Fruit representatives here were hopeful in late September that details of an agreement helpful to the fruit industry would be announced by technicians of the U. S., Great Britain, and Canada. In the announcement revealing the British promise to buy perishables and the Canadian promise to reexamine its embargo, there was an implied assurance that this would come about, sooner or later.

## The Tariff Debate

All during the debate over renewal of the Reciprocal Trade Agreements Act there were undertones of alarm in some industrial and agricultural quarters about the necessity for low tariffs in view of heavy American production in many lines—apples, for instance. The Republicans, however, were unable even to keep the "peril point" provisions in the Reciprocal Trade Agreements Act, much less hamper the low-tariff steam-roller that hit them, and it is obvious now that further efforts along this line are useless until elections, if then.

Representative Walter Horan (R.-Wash.), who is from Wenatchee,

Wash., and has been a fruit grower for decades, said recently that the U. S. Department of Agriculture has assigned \$4 million from Section 32 funds to combat low tariff imports of foreign fruit. He also declared that immediate revision of tariffs on imports of European cherries, Canadian and Australian apples, and South American pears is being considered on the policy level in Washington.

He further pointed out that tariffs on apples have been reduced from 22 cents in 1922 to 12½ cents at present, and he charged that America's apple-producing industry has suffered incalculably as a result.

On the other hand, administration sources here claim that the approximately 10 per cent differential in the value of American and Canadian currency always has more or less evened things up (insofar as American competition with Canada is concerned) and that the promotion of free trade has benefitted American agriculture and industry in many indirect ways not frequently considered by opponents of lower tariffs.

It generally is conceded that Canadian production in the Northwest is more efficient than American production, if a lower Canadian wage-cost is eliminated in the calculations. It is this lower wage-cost north of the border that hits American apple growers.

## Canadian Apples

Wheat isn't all that Great Britain is buying from Canada in the agricultural field. The hard-pressed British have arranged to purchase \$1.5 million worth of apples from Canada—the first time in three years that Canadian apples have moved to the United Kingdom.

The USDA itself is authority for the statement that for every two apples exported by American producers last year, three apples were imported. Imports have been greater than exports in only two previous market years—1942 and 1944. Exports last year were extremely low—about a million and a quarter bushels.

The tendency will be toward a small amount of exports this season, too. The USDA has forecast an export market of only some two to two and a half million bushels, mostly to Latin America.



## IN THE NEWS

### L. F. STEINER

Dr. L. F. Steiner has recently left for Hawaii where he will be in charge of the U. S. Department of Agriculture's chemical-control investigations of the Oriental fruit fly. The research program is being greatly expanded to prevent spread of this insect from Hawaii to the mainland.

Since 1934 Dr. Steiner has been in charge of the USDA's Deciduous Fruit Insect Laboratory at Vincennes, Ind., where he worked with apple and peach insect problems.



L. F. Steiner

### S. L. HOPPERSTEAD

S. L. Hopperstead, formerly with the B. F. Goodrich Chemical Co., where he was responsible for the development and introduction of agricultural chemicals, has joined the No-Wilt Plant Products Co. He will direct development and sales.

Prior to joining the staff of the B. F. Goodrich Chemical Co., Mr. Hopperstead was research professor of plant pathology at the University of Delaware and Delaware Agricultural Experiment Station and also was State plant pathologist of the Delaware State Board of Agriculture.



S. L. Hopperstead

### E. A. MEYER

Administrator of the Research and Marketing Act since its inception in 1947, E. A. Meyer has recently resigned and will leave government service. Mr. Meyer came to the Department of Agriculture in 1943 from the War Production Board where he had served as Assistant Director of the Food Division. Prior to that he had served 20 years in the food processing industry.



E. A. Meyer

P. V. Cardon, Administrator of the Agricultural Research Administration, will administer the Research and Marketing Act.

### R. H. SUDDS

New associate professor of pomology in the Plant Science Department at the University of Connecticut is R. H. Suds. Formerly with West Virginia University, where he was associate professor and associate horticulturist, Dr. Suds will teach in the University and carry on research in the Experiment Station.

### DODGE TAYLOR

The Florida citrus industry, in enlarging its Citrus Commission, has named Dodge Taylor as chairman of that organization. Mr. Taylor was chairman of the committee that wrote the new code and regulations for Florida citrus.



Dodge Taylor

Robert C. Evans has been appointed general manager to succeed Marvin H. Walker who resigned to become assistant to the president of the Florida Citrus Canners Co-operative.

OCTOBER, 1949

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## NEW FOLIAGE SPRAYS OF NITROGEN INFLUENCE FRUIT SET

By E. G. FISHER, Cornell University

LAST YEAR a new material was placed on the market for the nitrogen fertilization of apple trees through foliage sprays. This material, called NuGreen, is essentially composed of urea, an organic nitrogenous compound.

Work on urea sprays as a foliage-applied fertilizer has been in progress at the New York Experiment Station for several years. No injury to the foliage will generally occur at concentrations up to five pounds per 100 gallons of water. This past spring a slight marginal burning and leaf crinkling appeared on very young foliage from "pink spray" applications. The damage appears to have been negligible, however. The leaves have continued to function throughout the season.

The material is compatible with any insecticidal or fungicidal materials ordinarily used on apple trees and can be applied with the regular spray program. If separate sprays are made, the inclusion of a spreader-sticker is recommended.

### Leaf Absorption Rapid

To obtain maximum effects from the foliage sprays, it is important to thoroughly wet the foliage, particularly the undersurfaces of the leaves. The undersurface seems to be more efficient in absorbing the urea than the upper surface. About one-third of the urea applied is probably absorbed within an hour after application. The nitrogen effect from foliage sprays is thus obtained more quickly than from soil applications.

Most of the experiments with urea sprays in New York have been on the McIntosh apple. The undersurface of McIntosh apple leaves contains numerous hairlike epidermal cells or cell extensions. These cells may be important for the purpose of holding a large amount of the spray material and absorbing the urea. Smooth-leaved varieties of apples in experiments in New York and experiments with peaches elsewhere have not shown as great a response to foliage sprays as the McIntosh apple.

With the McIntosh or related varieties, such as Cortland, experiments have definitely shown that three or four early sprays at the recommended concentration will bring as good tree growth and as high yields as moderate soil applications of nitrogenous fertilizers.

The advantage in the use of urea sprays seems to be that for a given

amount of nitrogen applied to the tree, a temporary higher nitrogen level of the leaves at the desired time can be obtained through leaf sprays than through soil applications of nitrogen. Thus last year three sprays of urea (calyx and two cover sprays), with a total of two and one-half pounds of urea applied, effected a set of fruit considerably greater than a two and one-half pound early spring soil application of urea. This was probably a result of a high nitrogen and chlorophyll content of the leaves prior to the June drop, resulting in a decreased June drop.

The red color development of fruit from the three-spray treatment at harvest time was about equal to the color development of the fruit from trees receiving two and one-half pounds of urea on the soil in the early spring. The foliage sprays thus effected a yield of fruit greater than a two and one-half pound soil application and red color development of the fruit equivalent to a two and one-half pound soil application.

The trees receiving this three-spray treatment produced a light blossom this year. But the treatment effected a high set of the blossoms present and yields will probably be satisfactory.

### Schedule of Application

Experiments were started this year to compare various times of application, such as (1) two pink and a calyx spray; (2) one pink, one calyx, and one cover spray; (3) one calyx and two cover sprays; (4) three cover sprays.

Since the early sprays were applied on smaller leaf surfaces, they also received slightly smaller amounts of urea. Nevertheless, there appeared to be only small differences in fruit set and tree growth.

Chlorophyll determinations indicate that the early treatments will result in the best red color development of the fruit. It is still too early to say whether such early sprays will maintain fruit production.

Our experiments indicate that a four-spray treatment of two pink, a calyx, and a cover spray, will maintain fruit production. A three-spray treatment of a calyx and two cover sprays will do so also, though there is a tendency for an extremely heavy set of fruit when pollination conditions are favorable. The number of sprays applied should be adjusted to the original nitrogen level of the trees and natural fertility of the soil.

AMERICAN FRUIT GROWER

## THE COLLINS SYSTEM

(Continued from page 10)

To facilitate the harvest, a heavy log is dragged over the lush growth of cover crop just prior to picking. This lays the cover crop flat upon the ground, where it gradually rots and becomes humus. Then the picked fruit is stacked in boxes under the trees, on flat sleds or floats. A tractor draws the load out of the orchard and a mechanical loader automatically carries the boxes of fruit onto the waiting truck. Thus with a minimum of hand labor the choice pears move to the packing house.

### Nutrients Returned to Soil

Pear production as practiced by Collins is not hard on the land. The average production of 1000 boxes per acre, weighing approximately 25 tons, takes from the soil about 45 pounds of nitrogen, 18 pounds of phosphoric acid, and 67 pounds of potash per acre. At the present price of fertilizers, this is about \$15 an acre. The much greater amount of nutrients required to grow the trees is returned to the soil in large measure in the leaves and prunings which drop and rot with the cover crop.

This relatively small removal of fertilizer would be nearly replaced by the annual use of about 220 pounds of ammonium sulfate and 100 pounds each of superphosphate and muriate of potash. Much more than this goes into the soil annually by way of fertilizers, manure, and nitrogen fixation by legumes. In earlier days 10 tons of sheep manure an acre were sometimes used. This alone would furnish about 200 pounds of nitrogen, 70 pounds of phosphoric acid, and 200 pounds of potash, or considerably more than the crop removal.

In addition to the manure treatment, commercial fertilizers are liberally used, sometimes as much as 900 pounds an acre of cyanamid, which would supply at one application nearly 200 pounds of nitrogen in addition to lime. Superphosphate has been used also, usually in alternate years.

### Humus Ideal for Crop

The humus and rotting litter so highly prized by Collins provide a larger circulating supply of available nutrients and make sure that the trees never fail to have access to all the nutrients needed for satisfactory growth and continuous production. And what is also important, the large amount of humus materials and the roots of the cover crop maintain the much desired granular, crumb structure, that is ideal for any crop.

Not only is soil fertility well maintained, but there is an abundance of irrigation water supplied by the melting snows of Mt. Hood and the surrounding territory. Water is applied twice a month or as often as is necessary. Because of the permeable soil structure there is no problem of surface runoff and waste of water. Neither does the soil become waterlogged from irrigation or natural precipitation.

The older pear trees are becoming so large that there is competition for light. Collins plans to gradually re-

place the overgrown trees by taking out every other one and replanting with a young tree. By replacing a small part yearly, the orchard can be gradually renewed without causing much loss in production.

Collins is well satisfied with his "scientific neglect" system of soil and tree management and his easy handling of fruit. And well he might be, for his methods have resulted in exceptional yields, in lowering cost of production, in greater profits, and in more leisure hours for the enjoyment of life to the fullest.

## THE LOWDOWN ON INSULATION

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Eventual cost	low	high
Efficiency	remains high	generally deteriorates
Moisture resistance	excellent	some good, some poor
Vapor seal	simple	complicated or difficult to install
Structural strength	very good	some non-existent, others fair
Weight	very light	varies
Resilience	considerable	from fair to complete rigidity
Settling	none	a serious problem
Supporting structure	none	elaborate
Fire resistance	good	excellent to poor
Vermis resistance	good	excellent to very bad
Odor absorption	none	some are regular sponges

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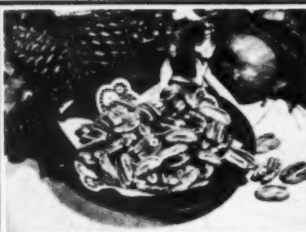
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## NORTHWEST STARTS APPLE HARVEST

Marketing agreements, Canadian apple imports, and cannery prices add up to a big headache for Pacific Northwest growers, as the Nation's big, quality apple crop comes off the trees.

By BILL HOARD

**A**S HARVEST of some 30 million boxes of apples gets into high gear in the Pacific Northwest, three subjects stand out as highly important in the fruit deal.

These are the move toward Federal marketing agreements, a strong feeling against Canadian apple imports into the U.S., and what has amounted almost to a grower boycott of canning companies because of low prices.

### Marketing Agreements

Let's look at marketing agreements first. On the apple front it seems evident to leading growers and others in the deal that hearings leading to establishment of a marketing agreement will be held in the State of Washington within a few months.

The groundswell of public opinion in favor of setting up the marketing agreement machinery is growing, both in the Yakima and Wenatchee apple belts. In Wenatchee, where at least 21,000 carloads of apples will go to market this season, the Grange, the fruit growers' Land Use Planning Committee, and the Grower-Owned Washington Growers Clearing House Association are all working for the agreement idea.

In the Yakima Valley one of the leading proponents of the plan is the Farm Bureau. And in the minds of most growers, the agreement idea is not limited to apples.

Growers at Wenatchee and Yakima mass meetings have demanded unanimously that marketing agreements be established on other fruits, including cherries, apricots, peaches, and Bartlett pears. An agreement is already in effect on winter pears in the Coast States.

### Canadian Imports

Canadian apple imports are always a problem for U. S. apple growers, and Northwest producers feel that they are hardest hit by fruit from north of the border.

Canadian growers have asked that 2,250,000 boxes of fruit from all of Canada be allowed to enter the United States this season, and it is assumed that nearly two million boxes will be coming from British Columbia, in di-

rect competition with Northwest boxed apples.

Petitions calling for restrictions of these imports have been circulated in Washington State, with several thousand signatures reported by mid-September. The petitions, which will go to various State and Federal agencies, point out that the exceptionally large crop domestically makes the imports especially undesirable. The apple growers of the Northwest concede that trade between the two nations is necessary but they feel that they are bearing a disproportionate share of the trade burden in Canada's scramble to get dollars.

### Fresh Market Favored

More Bartlett pears and more peaches were sold in fresh fruit markets of the Northwest the past few weeks than in any previous marketing year.

And most of the sales were at prices considerably higher than the \$30 a ton offered by canneries for the fruit. The peaches and pears glutted fresh fruit markets simply because the cannery price was so low, and it is safe to say that practically all of the tonnage the canneries did get went to them simply because there was no other outlet for the fruit.

Special fresh fruit ad campaigns were very effective, under the leadership of the Washington State Fruit Commission.

One Wenatchee box supplier, who makes a 28-pound lug that is used almost exclusively for fresh fruit sale of peaches and pears in nearby markets, sold 350,000 of the boxes during the summer just past. The previous big year for this type of box was 1948, when 88,000 were sold, and these figures are convincing proof that growers did all in their power to sell fruit to anybody but the canners.

Shortage of quality canning peaches, coupled with the movement of peaches and pears to the fresh markets, meant comparatively short supplies for Northwest canners. The \$30 price this year compares with \$110 a ton for pears in 1948 and \$80 to \$85 a ton for peaches.

AMERICAN FRUIT GROWER



## RESEARCH AWARD

IN 1950, for the first time, an award will be granted for outstanding research in the field of horticulture as related to the nursery industry. Called the Norman Jay Colman award, it is sponsored by the American Association of Nurserymen. It was established in honor of the last Commissioner and first Secretary of Agriculture, Norman Jay Colman, who is often referred to as the "Father of the Experiment Station" because of his interest in obtaining Federal aid for the stations.

The purpose is to stimulate research work in the Land Grant Colleges and Universities and other research institutions of the United States.

The award is a gold and bronze medal and a \$100 cash prize. Also included is a trip to the annual meeting of the association at which the award winner is announced.

Submit contributions in the form of reprints of published research in quintuplet by January 1 of each year to Dr. William J. Martin, dean and director, New Jersey Agricultural Experiment Station, New Brunswick, N. J.

Selection of the winner will be made by a committee of directors of the agricultural experiment stations.

## CERTIFICATION

(Continued from page 7)

Michigan nurseries and are found adaptable to standard nursery practices.

Virus diseases other than those encountered under Michigan conditions are equally as serious in other fruit growing regions of the United States and Canada. Likewise, the possibility of propagating such diseases through the use of contaminated scionwood is equally as strong.

The progressive fruit grower as well as the nurseryman cannot ignore this threat to profitable fruit growing. Only by a system of certification involving the use of suitable techniques of inspection, indexing, heat treatment, and possibly chemical treatments can both be more fully assured that young stone fruit orchards are not planted with an initial incidence of virus disease.

We have arrived at a definite conclusion that the normal usual visual field inspection of stone fruit nursery stock is entirely inadequate to cope with virus diseases. As a result of our experiences in this work we urge all States to adopt a budwood certification program for the protection of the fruit grower as well as the nursery industry.

OCTOBER, 1949

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From where I sit ... *by Joe Marsh*

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Asked Specs Allen to go hunting last week. Known him all my life, so I wasn't surprised when he showed up with no gun. Specs doesn't like to kill anything.

Couldn't ask for a better hunting companion, though. We tramp around the woods, and whenever the dogs flush a bird, I blaze away while Specs just watches.

Told him once I was surprised he went along ... feeling the way he does about shooting anything. "Well, Joe," he says, "you do what you think is right and I'll stick to what I think is right. I've no call

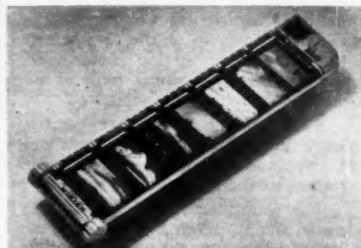
to dislike you for not seeing *everything* the way I see it."

From where I sit, open-mindedness is a wonderful quality. There are plenty of things Specs admires that I don't care for. Like his fondness for buttermilk. I'd rather have a glass of beer anytime ... but Specs Allen and I don't let little differences of opinion get in the way of something big like friendship.

*Joe Marsh*

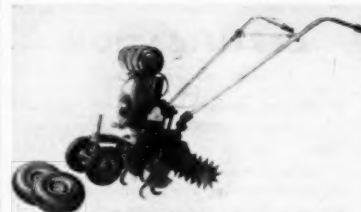
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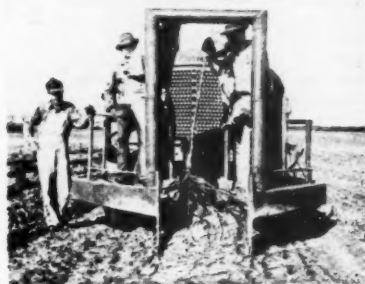


"Fitting the power to the farm," the John Deere Co. of Moline, Ill., is now manufacturing its first track-type tractor,

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### Tree Digger



A mechanical tree digger which eliminates pruning of newly transplanted pecan and walnut trees has been invented by Hugh Wolfe of Stephenville, Tex. Made with an Oliver "Cletrac" crawler tractor and a Heil Dozer, the new digger removes young tree stock without destroying the valuable root system. The Oliver Corp., Chicago, Ill., can supply further information.

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A 24-page picture-packed booklet describing new methods of fertilizer application and seeding operations has just been published by the Power Production Co. New methods and equipment for saving time, labor, and costs are pictured and described, and there are several pages containing important fertilizer data. A free copy may be obtained from the Power Production Co., Dept. E, 10 S. LaSalle St., Chicago 3, Ill.

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## PURDUE'S MOBILE CLASSROOM AIDS RETAILERS' FRUIT SALES

By CHARLES E. FRENCH and ERIC OESTERLE  
Purdue University

**A** NEW ERA in retail selling of fresh fruit is developing. In recent weeks the Purdue University Extension Service expanded its functions into the field of retail merchandising. Beamed at existing retail problems, this effort is designed to reflect savings back to the grower. Such a step will vitally affect the lives and bank accounts of fruit growers, as well as fruit retailers.

Purdue has undertaken this job by initiating, with the aid of the Indiana retail industry, a Fresh Fruit and Vegetable Merchandising Program. The program is centered in a large trailer which is a scientifically designed classroom. It is comprehensive, with a balance between prescribed methods of merchandising and the actual in-the-store installation.

Although some large retail institutions have installed specialized personnel to conduct similar schools, the average retailer cannot afford such an undertaking. Representatives of these retailers recognized their problem and presented it to Purdue. The outlined program was the result.

### The Program

The retailer is offered, for a nominal fee, a full course in trimming, pricing, planning, and building of displays, prepackaging, daily and overnight care of produce, and special displays. The training is by "on the job" methods, and-tricks of the trade are taught with actual produce.

After these principles are presented to the retailer, his store is visited by

the itinerant teacher. Here, the retailer solves his own problems with the principles learned and sees his purse fattened because of the knowledge gained.

The mobile classroom also acts as a focal point for dissemination of current printed material. Each "graduate" is kept informed on latest techniques.

### All Concerned Benefit

"This is all fine," you as a grower say, "but where do I come in?" The underlying philosophy of our free enterprise system says that a saving which results from a better approach to a problem will not go entirely to the one initiating such an approach, but in time competition will assure division of this savings among all.

It is in this way that we help all by helping one another. To induce more efficient methods at the retail level is to assure a gain eventually at the grower level.

The above principle is not new to extension people; however, heretofore it has been used primarily at the producer, wholesaler, or consumer level. To approach the problem of lowering distribution costs for the retail grocer is a new thing.

The adaptation of this principle by the Indiana independent retailer representatives and Purdue University seems an excellent approach to helping the fresh fruit industry. This promotion of sales and the elimination of waste will mean dollars for you whether you are a retailer or a grower.



Interior of Purdue's mobile classroom with instructor and attentive "student" retailers.

AMERICAN FRUIT GROWER



# CAN WE STOP THE ORIENTAL FRUIT FLY INVASION?

By KOJI ARIYOSHI

Here is a first-hand account of the invasion of the Hawaiian Islands by the Oriental fruit fly. It is written by Koji Ariyoshi, a graduate of the University of Georgia and at present editor of the Honolulu Record. According to on-the-spot observers, spraying or dusting is little more than temporary relief since hordes of flies are continually moving to cultivated plants from wild hosts. Constant vigilance is essential if this devastating intruder is to be kept from the great fruit regions of the U.S.—Ed.

LESS THAN 12 hours by air from California, a deadly potential invader—the Oriental fruit fly—is trying to slip through a blockade from Hawaii into continental United States. The invasion need not be on a mass scale. If one or two fruit flies could sneak away as stowaways and get past Bureau of Entomology and Plant Quarantine inspectors, there soon would be an army sweeping across America's richest agricultural areas, especially the frost-free regions.

If the invasion ever succeeds, fruit and vegetable growers and distributors from California to Florida will confront a formidable and costly enemy. The Oriental fruit fly is a small but aggressive pest that already has devastated Far Eastern fruit and now is wreaking havoc in Hawaii.

## Deadliest of Deadly Enemies

Entomologists characterized the Mediterranean fruit fly as "probably the most deadly of all enemies of tropical and semi-tropical fruits." But that was before they saw the Oriental fruit fly, or *Dorcus dorsalis*, in action. It's so tough it even "bumps off" the hitherto invincible Mediterranean fruit fly! Oriental fruit flies attack other flies on the same fruit.

Virtually all fruits in America are susceptible to the Oriental fruit fly. Observation has shown that the fly is partial to peaches, apricots, plums, oranges, lemons, and grapefruit. It even attacks cotton bolls.

This deadly enemy of fruit sneaked into the Hawaiian Islands during World War II—on planes or troop ships. Its presence was discovered first in 1946 by a farmer on the cool slopes of Haleakala Mountain on the island of Maui, who reported to government entomologists that up to 100 per cent of his crop had been ruined by a new and strange larvae.

## Widespread, Costly Damage

"No one really knows how much damage the Oriental fruit fly has

caused in Hawaii," Dr. H. A. Bess, entomologist for the University of Hawaii Agricultural Experiment Station, said after numerous survey trips to the various islands. He estimates the cost so far to the islands in the millions of dollars, but other observers say that it easily reaches into the tens of millions.

He believes that Hawaii, if it could conquer the fly, could market its produce elsewhere without worrying too much about the American mainland embargo, which was put into effect by the U. S. Department of Agriculture last March 23.

## The Fight Is On

The Hawaiian Territorial Legislature has appropriated \$200,000 in a valiant effort to control the pest, and the Territory petitioned Congress for \$2 million, which, at last reports, had been trimmed to \$450,000.

The California Legislature has earmarked \$165,000 as a defense fund against the fruit fly attack, and it has sent State Senator Fred Weybret and a group of top entomologists to Hawaii to investigate the fly and its habits.

Exporters in Hawaii are using fumigation, gas, and heat treatment to make shipments of fruits, vegetables, and flowers to the mainland possible. The difficulty lies in the development of methods which will kill the insects yet will leave the fruits and flowers unharmed.

## Parasite Desperately Needed

Two phases of combating the fly are being conducted in Hawaii. The first is chemical, including fumigation, spraying, and dusting. The second is biological, or the fighting of fruit flies with parasites.

Hawaiian scientists have scoured the Philippines, Malaya, Australia, and India for such parasites. One of these, *Opius longicaudatus*, has been bred by the thousands and is now quite abundant in several localities on the island of Oahu. "Looks like this species will be of great value to us," commented Dr. Bess.

The parasite that might save tens of millions of dollars to Hawaiian—and, indirectly, American—fruit growers may already be in Hawaii, or it may be in deepest Africa as yet undiscovered, or it may never be found. In the meantime, the deadly fruit fly is trying to span the ocean and only eternal vigilance can keep it from crashing the tenuous blockade to California's long and rugged coastline.

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Revolutionary plant, yields 1,000 cases first year, 3,000 second. Brought 25% premium in most markets. Profitable plant maker, good shipper, consistent yields wherever exhibited. Government, state tested in every section of U.S. Eleven years in production by A. T. Kausa, originator.  
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Blackmore, Klammere, Klondyke. Postage paid, 100, \$1.25; 250, \$2.25; 500, \$4.25. Express collect, 1,000, \$8.00; 5,000, \$27.50; 10,000, \$50.00. Tenn. Shipper, Tenn. Security, Robinson, Premier. Postage paid, 100, \$1.50; 250, \$3.00; 500, \$5.00. Express collect, 1,000, \$8.00; 5,000, \$27.50; 10,000, \$50.00. Plants ready. Order now. We will ship date you specify.

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150 MAIN STREET • PERRY, OHIO



## STATE NEWS

(Continued from page 15)

**KANSAS**—Peaches are about harvested and this crop was largely sold from the orchard at various prices. Jonathan apple harvest is in progress, with many grades and prices. The crop from one of the larger Jonathan orchards in northeast Kansas was sold to a jobber at \$2.50 per cwt. This grower sells the entire crop after the ground is cleared, and the buyer furnishes the containers and hauls the fruit away.—*Geo. W. Kinkad, Sec'y, Topeka.*

**KENTUCKY**—The "forgotten" farm orchard—orchards that have never been sprayed in the last 10 years—is in the picture in Kentucky for 1949. Many bushels of apples will be harvested and consumed by rural Kentucky children. Reason for crop: Apple scab damage was light last spring.—*W. W. Magill, Sec'y, Lexington.*

**TENNESSEE**—Tennessee's turn for red-banded leaf roller trouble seems to be arriving. Where much damage to fruit is noticed, a post-harvest spray of DDD (Rhothane, etc.) may be worth while, before leaf fall, to reduce the overwintering leaf roller population.

For new late apple plantings, the emphasis is on red color sports of Delicious, Stayman, Rome, Jonathan, plus Turley, Golden Delicious, some Grimes, and, for the first early, Lodi instead of Transparent. Summer apples include Summer Champion (Holland) and Kentucky's Paduach and Polley Fades.

**Hugh W. Prettyman, 56, extension horticulturist and marketing specialist of West Virginia University, died recently of a heart attack. Mr. Prettyman was a frequent contributor to the State News Department, furnishing news on fruit production and marketing in West Virginia and the Appalachian area, in which fruit belt he was widely known.**

Dixigem seems to be the most popular of the recent peach introductions, although Redhaven, Sunhigh, Triogem, and Southland are included in plantings by growers who want to increase the percentage of peaches ahead of Elberta season.

The most popular new pear is the Orient. A half million plants of the Tennessee Experiment Station's new early strawberry, No. 965, are available. In red raspberries, the New Tennessee Prolific will be tried as a variety to follow the popular Latham.—*J. C. McDaniel, State Hort., Nashville.*

**UTAH**—The price situation in Utah is about as follows: Apricots—Market limited. Large percentage of the crop dropped to the ground. Canners and processors accepted no fruit. Apples—Buyers interested in crop but offering no prices at present. Pears—Bartlett's around \$2.25 per bushel for 2 1/4-inch minimum. Peaches—Just beginning at \$1.75 to \$2 per bushel. Sweet cherries—Brought 8 1/2 to 10 cents per pound in 15-pound lugs.—*A. Stark, Sec'y, Salt Lake City.*

**CALIFORNIA**—A Federal marketing agreement and order regulating the handling of dried prunes produced in this State recently went into effect. The order, approved by 73.7 per cent of the growers in a recent referendum, is designed to keep low-quality prunes off the market.

OCTOBER, 1949

## MOUSE CONTROL

(Continued from page 11)

Operators are cautioned not to try broadcasting the grain bait because coverage and placement will not be systematic or adequate, bait and labor costs will rise sharply, and wildlife may possibly be endangered by such a procedure.

The type of bait used is not available from any source in a prepared form but can readily be prepared when the ingredients are at hand. Zinc phosphide and methyl green dye are available from some of the large chemical supply concerns.

### Bait Formula

The formula and method of preparing the grain bait follow:

- 100 pounds cracked corn
- 2 pounds zinc phosphide
- 1 quart vegetable oil
- 1/2 ounce methyl green dye

Because the dye is not oil soluble, the cracked corn may be dyed beforehand by dissolving one-half ounce of methyl green in one gallon of water and pouring it over the corn in a large metal tub. Thorough mixing will color the corn evenly. This dyed grain must be allowed to dry thoroughly before using it to prepare the poison bait.

As an alternative method, the dry powdered dye may be mixed with the dry zinc phosphide before adding to the oil. The prepared grain will then turn green in the orchard in contact with moisture from the ground, dew, frost, or rain.

Mix the zinc phosphide (or zinc phosphide and dye) with the oil to form a thin paste. *Avoid breathing the dust* and work outdoors or in an open, airy place. Gloves should be worn. Pour the paste over the grain in a large metal tub and use a hoe to mix the mass very completely so that the grains are evenly coated. More poison will stick to the broken corn surfaces than to the unbroken surfaces and this is desirable. *Avoid breathing the fumes* while mixing.

For mixing large quantities, any drum-type mixer may be used. This should be thoroughly scrubbed out with soap and water after using.

### Store Carefully

The prepared grain may be sacked immediately. Since zinc phosphide is poisonous to humans and to all animals the material should be stored carefully. Do not store the prepared bait in a tightly closed building where animals or people are present; however, it must be kept dry. It will keep for several months in a dry place without serious loss of strength. Label all containers "POISON" and use them for no other purpose.

## 1000 EGGS IN EVERY HEN

If You Keep Chickens  
CUT THIS OUT

Every pullet chick is hatched with over 1,000 egg ova in her system—her egg supply for life. Why stop her after first year's laying—lose profit from all those EXTRA EGGS still in her body? Henry Trafford, Poultry Expert and Breeder—for years Editor of "Poultry Business" magazine—created his amazingly successful 1,000 EGG PLAN of Poultry Raising to get MORE EGGS from every hen through longer laying life—give high annual replacement, breeding, rearing, feeding costs—get more net profit from every dozen eggs. If you keep poultry for eggs—want more eggs at this season's high prices, write today for your FREE COPY of Trafford Plan "1,000 EGGS IN EVERY HEN."

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Successful Home Method That Anyone Can Use  
On Any Reducible Rupture Large or Small  
COSTS NOTHING TO FIND OUT

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### Trampling Out the Vintage

By Joseph A. Cocconovser

A powerful story of farming on poor, overworked and eroded soil. The tragedy of centuries of habit and custom was refused to accept modern soil management and their own ultimate destruction is the theme of this inspiring and interesting book. Joe Cocconovser, the author, is the Father of our present system of teaching the counterproductive of our public schools. Many families which the author describes have their ancestral acres, very agricultural community. No one can read this book without becoming a better farmer and converting the bitter vintage of grapes into sound and mellow fruit.

Sent postpaid on receipt of \$2.75

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# Ramblings

## OF A HORTICULTURIST

### More About Utah

**T**HE DAY following my visit with Dr. S. W. Edgecomb at the Utah State Agricultural College at Logan (see August, 1949, issue), I spent tramping through orchards in the Salt Lake area.

I stopped and talked with Mrs. C. M. Hill whose 15-acre fruit and vegetable farm is near Provo. Pickers were at work in a Latham red raspberry planting. They were receiving a wage of 75 cents per 12-pint case, and Mrs. Hill was getting \$3 a case for her raspberries on the market. The acre planting annually produces about 600 cases or 3600 quarts. Irrigation water is applied every seven days for a period of eight hours. Mrs. Hill is allowed one hour of water for each of the eight shares of water stock she owns.

At the J. H. Clark orchards near Orem I found that Bing cherry harvest had been in progress for a week and that pickers were just finishing up the last of the Lamberts. Early Richmond harvest was scheduled next, after which the Montmorencys would be ready.

Pickers were pulling off about 1500 pounds of cherries a day, with stems, and were getting three cents a pound. Five women in the packing house were sorting and packing about 500 bushels a day. The sour cherries go to a cannery and the sweets to the fresh market.

Clark's yield of sweet cherries in 1948 was 27,000 cases of 13 pounds each, which is quite a lot of cherries. From his orchard came two packed cases of extra fancy one-inch cherries. One was sent to President Harry S. Truman, the other to the President of Mexico, as gift tokens from the State of Utah.

The Clark farm used to cover 100 acres, 40 of which were in strawberries. But Mr. Clark has reduced his acreage to about 25 of cherries, apples, and peaches. Shortage of dependable labor among other factors caused him to reduce his plantings.

Pollination is a major problem in getting a good set on Bing and Lambert sweet cherries. To facilitate this,

Clark each year imports Black Tartarian pollen from California and uses bees to do the pollinating. The pollen is placed at the opening of the hive where the bees pick it up and carry it to the blossoms. This practice is general in Utah.

In the apple orchard the trees are set on the diagonal 28 feet apart. Intercropping was practiced for the first five years, using strawberries. The first year nine rows of berries were grown between the apple rows, the second year seven rows, the third year five rows, and at the end of five years all the rows were plowed and the orchard sowed to alfalfa. The alfalfa is clipped twice a year and the clippings are left to add organic matter and nitrogen to the soil. Mr. Clark has applied commercial fertiliz-

er for only the last six years, manure having been used previously.

These western soils are naturally rich in potash; therefore the fertilizers used contain only nitrogen and phosphorus. About seven pounds of a 16-20-0 are given each tree at the beginning of the growing season, with an additional seven pounds of ammonium sulfate at blossoming time.

Zinc is applied in a spray just before the buds open, and iron is supplied the trees in capsule form once a year. Holes are bored in the trunks of the tree and the capsules inserted and the hole plugged. It takes about 12 capsules to a mature apple or peach tree. By these applications of zinc and iron the chlorosis of fruit plants, a common nutritional disorder in this area, has been largely overcome.

The orchards are irrigated once every two weeks except when growing rapidly in the spring, when they are irrigated every week. About three acres per hour are irrigated.

For three years Mr. Clark has been spraying the trunks of his peach trees with DDT, two pounds per 100 gallons, and has had perfect control of the peach tree borer.—E.S.B.

**Left**—Picking Latham red raspberries on the farm of Mrs. C. M. Hill, Provo, Utah. **Below**—J. H. Clark, fruit grower at Orem, Utah, carefully examines developing Jonathan apples. Photos by E. S. Santa.





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20 & 13 gpm; 600 lbs. pressure



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50 & 35 gpm; 600 lbs. pressure



20 & 13 gpm; 600 lbs. pressure



50 & 35 gpm; 600 lbs. pressure



20 & 13 gpm; 600 lbs. pressure



50 & 35 gpm;  
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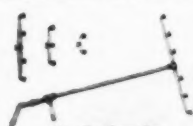
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## EDITORIAL PAGE



E. G. K. MESTER  
Publisher

H. B. TUKER  
Associate Editor

### Two Million Box Canadian Apple Deal

**W**HY SHOULD we let Canada dump two million boxes of apples on our market when we have a surplus problem that strains our resources, ask apple growers in western and mid-western States.

Why should we be made the victims of the State Department's so-called reciprocal trade agreements when we are compelled to ask for Federal assistance in unloading our surplus fruit?

There, Mr. Grower, you have the crux of the problem of today's fruit situation! Too many Bartlett pears! Too many Gravenstein apples! Too many peaches! Too many grapes! And apples everywhere; yet we import two million boxes of apples. These create a marketing problem which distresses growers.

Perhaps more than facing huge surpluses we are actually in a leveling off process, and lower prices from those which prevailed during the war and post war periods are temporarily upsetting growers. However, although we cannot prevent Canadian imports, we must never stop developing and exploiting to a still greater extent the markets in our own country. In marketing today's ample crops we must resort to aggressive selling, storing wisely, and opening new sales channels wherever possible. We must stick together to insure fair prices from processors.

*But let's use those two million boxes of Canadian apples to good advantage in trading with the State Department. Fruit deserves a better break in the future, whether it be in reciprocal trade agreements, subsidies to help reopen foreign markets, or quick help in dealing with our surplus fruits.*

*Let's not be out-traded!*

### Fruit for Health

ECONOMISTS will long argue whether or not fruit is a luxury food. There may be a reason for pedantic shaking of heads and scratching of pens on this score, but there is no getting away from the fact that as far as health is concerned fruit is a vital necessity.

For health-giving vitamins, minerals, and sugars, fruits can't be equalled. For children, the middle-aged, and the old, fruits play an important daily part in fulfilling diet requirements. Not only is fruit important nutritionally but with unparalleled aroma, color, and taste it cannot help but stimulate a healthy appetite. In no other food is the promise of goodness so closely tied with qualities of health.

Man has been searching since primitive times for the food which insures good health. Today millions of dollars are paid for patent medicine, drugs, and other remedies. Spent for fruit, this money would repay the buyer hundreds of times over. Various fruit organizations are now publicizing the health-giving qualities of fruit, and no more effective advertising could be used. The 150 million people of this country must be made to subconsciously associate fruit with health. Every fruit grower should adopt as his own slogan, "Fruit for Health," and advertise it vigorously. A fruit for health movement, picking up momentum each year, would mean better health for the consumer—and greater prosperity for the fruit industry.

### Fruit Production at a Glance

	1938-47	1948	USDA Sept. 1, Est. 1949
	Thousand bushels		
Apples	111,114	88,407	129,423
Eastern	47,783	36,406	54,036
Central	19,400	13,444	27,096
Western	43,931	38,557	48,291
Peaches	69,947	65,352	75,729
Clng., Calif.	17,372	20,835	24,544
Free., Calif.	10,901	9,292	11,251
Pears	30,832	26,334	35,505
	Tons		
Grapes	2,736,160	3,044,400	3,049,800
Apricots	227,100	201,500	216,300
Plums (fresh)	80,280	70,500	95,700
Prunes (fresh)	129,000	88,600	154,800
(dry) Calif.	201,200	182,000	168,000



### Salute to the Nursery Industry

OFTEN the least noisy and least spectacular achievements in the long run mean the most. True, DDT and 2,4-D and other new discoveries and developments have been phenomenal and merit the praises they have received. But the slow, steady, painstaking, step-by-step developments should not be overlooked.

In this connection, it is the nursery industry, together with those associated with it, which deserves a word of congratulation and appreciation for the great improvements which have been made in the quality and performance of the nursery stock upon which the fruit industry rests.

For example, there was a time when the fruit grower purchased a thousand fruit trees with considerable misgivings. He planted five thousand "McIntosh" apple trees and found when they came into fruiting that they were Wolf River! Or he planted a hundred Bing sweet cherries and a thousand Elberta peach trees to find some of the former to be Mazzards and some of the latter to be white seedlings.

Today, it is the less forward-looking nurseryman who does not have his trees inspected regularly for trueness-to-name based on leaf and bark and growth characters worked out by Dr. J. K. Shaw of Massachusetts, Dr. W. H. Upshall of Canada, and others, and carried on by Dr. A. F. French, Dr. O. C. Roberts, and others. So accurate is this work that mixtures are rare, as shown by the need for pollinators in solid blocks of self-unfruitful varieties.

Inspectors for State and Federal governments make careful inspection of nurseries and of nursery stock for both old and possible new pests. Quarantines and shipping regulations also have helped in this respect. The result is that stock is practically free of insects and disease.

In line with the constant effort to improve the product, both the nursery industry and the research and inspection services of the country are leading the way in the control of those baffling virus diseases that are now so threatening. The budwood certification plan, of which the Michigan plan is an example, is one of the forward steps.

Today, the nursery business is largely in the hands of third and fourth generation operators—a testimonial to reliability and satisfied customers. It is fine that the nursery industry, the fruit industry, and the inspection service work so well together. The facts are not so noisy nor so spectacular as some others, but they are real and they are solid, and they provide substantial underpinning to a firmly established fruit industry.

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**MAKE MONEY DESPITE FROSTS:** "I am enclosing a few films of one of your Stark Golden Delicious trees that is 4 years old and this is the second crop. This tree bore 100 pounds of nice Stark Golden Delicious Apples last fall. Ground was frozen two or three inches thick when it was in full bloom, and still it fruited."—J. D. McDonald, Montana.

**MARKET PRICE 52% HIGHER FOR STARKING DELICIOUS:** The Chicago Market Report of the U. S. Dept. of Agriculture, May 9, 1949, listed Starking Delicious at \$7.00 to \$7.25 per bushel box—52% to 55% MORE than next highest priced apple.

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**WIN PRIZES:** "We won every Sweepstakes at the Bangor Apple Show. Took 90 ribbons. Over \$400 cash and merchandise prizes. ALL my prize-winning fruit was grown on Stark trees."—H. T. Bigelow, Mich.

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